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DEPARTMENT OF THE ARMY

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JUSTIFICATION OF ESTIMATES FOR AMENDED FY 1988/1989 BIENNIAL BUDGET

SUBMITTED TO CONGRESS

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PROCUREMENT OF AMMUNITION, ARMY

PROCUREMENT OF AMMUNITION, ARMY

JUSTIFICATION OF ESTIMATES FOR FISCAL YEAR 1989

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Section 1:

Budget Appendix Extract

Appropriation Language

FY 1989 Program and Financing Schedule

FY 1989 Object Classification Schedule

Procurement of Ammunition, Army

APPROPRIATION LANGUAGE

For construction, procurement, production, and modification of ammunition, and accessories therefor; specialized equipment and training devices; expansion of public and private plants, including ammunition facilities authorized in military construction authorization acts or authorized by section 2673, title 10, United States Code, and the land necessary therefor, without regard to section 4774, title 10, United States Code, for the foregoing purposes, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title as required by section 355, Revised Statutes, as amended; and procurement and installation of equipment, appliances, and machine tools in public and private plants; reserve plant and Government and contractor-owned equipment layaway; and other expenses necessary for the foregoing purposes; (\$2,273,592,000) \$2,007,800,000 of which \$258,100,000 shall be available only for the Army National Guard and Army Reserve to remain available for obligation until September 30, (1989) 1990 and further for the foregoing purposes, \$2,007,800,000 of which \$218,000,000 shall be available only for the Army National Guard and Army Reserve, to become available for obligation on October 1, 1988 and to remain available for obligation until September 30, 1991.

Procurement of Ammunition, Army
Program and Financing (in thousands of dollars) SUMMARY

Identification code	21-2034-0-1-051	Budget Plan (amounts for PROCUREMENT actions programmed)				Obligations		
		1987 actual	1988 est.	1989 est.	1987 actual	1988 est.	1989 est.	
Program by activities:								
Direct program:								
00.0101	Ammunition	1,731,989	1,845,650	1,799,950	1,900,231	1,781,265	1,789,139	
00.0201	Ammunition production base support	348,088	427,942	207,850	467,033	555,770	228,354	
00.9101	Total direct program	2,080,077	2,273,592	2,007,800	2,367,264	2,337,035	2,017,493	
01.0101	Reimbursable program	35,326	41,900	38,800	29,781	49,824	38,800	
10.0001	Total	2,115,403	2,315,492	2,046,600	2,397,045	2,386,859	2,056,293	
Financing:								
Offsetting collections from:								
11.0001	Federal funds(-)	-30,835	-32,500	-28,700	-29,926	-32,500	-28,700	
13.0001	Trust funds(-)	-4,414	-9,400	-10,100	-3,760	-9,400	-10,100	
14.0001	Non-Federal sources(-)	-77			-42			
17.0001	Recovery of prior year obligations				-155,576			
	Unobligated balance available, start of year:							
21.4002	For completion of prior year budget plans				-423,407	-250,488	-179,121	
21.4003	Available to finance new budget plans	-72,562	-7,200		-72,562	-7,200		
21.4007	Reprogramming from/to prior year budget plan	-45,255						
22.4001	Unobligated balance transferred to other accounts	36,149			36,149			
	Unobligated balance available, end of year:							
24.4002	For completion of prior year budget plans	7,200			250,488	179,121	169,428	
24.4003	Available to finance subsequent year budget				7,200			
25.0001	Unobligated balance lapsing	9,106			9,106			
39.0001	Budget authority	2,014,715	2,266,392	2,007,800	2,014,715	2,266,392	2,007,800	
Budget authority:								
40.0001	Appropriation	2,087,150	2,273,592	2,007,800	2,087,150	2,273,592	2,007,800	
40.0017	Appropriation rescinded	-72,562	-7,200		-72,562	-7,200		
42.0001	Transferred from other accounts	127			127			
43.0001	Appropriation (adjusted)	2,014,715	2,266,392	2,007,800	2,014,715	2,266,392	2,007,800	
Relation of obligations to outlays:								
71.0001	Obligations incurred, net				2,363,317	2,344,959	2,017,493	
72.4001	Obligated balance, start of year				3,244,350	3,353,435	3,839,694	
74.4001	Obligated balance, end of year				-3,353,435	-3,839,694	-3,726,787	
77.0001	Adjustments in expired accounts				12,639			
78.0001	Adjustments in unexpired accounts				-155,576			
90.0001	Outlays				2,111,295	1,858,700	2,130,400	

Procurement of Ammunition, Army
Object Classification (in Thousands of dollars) SUMMARY

Identification code	21-2034-0-1-051	1987 actual	1988 est.	1989 est.
Direct obligations:				
Other services:				
125.004	Other			
126.001	Supplies and materials	504,228	232,041	160,735
131.001	Equipment	1,858,301	2,104,994	1,856,758
		4,735		
199.001	Total Direct obligations	2,367,264	2,337,035	2,017,493
Reimbursable obligations:				
Other services:				
225.004	Other	6,343	13,350	13,350
226.001	Supplies and materials	23,379	22,474	25,450
231.001	Equipment	59	14,000	
299.001	Total Reimbursable obligations	29,781	49,824	38,800
999.901	Total obligations	2,397,045	2,386,859	2,056,293

4-4 February 1988

Procurement of Ammunition, Army
Program and Financing (in Thousands of dollars) FISCAL YEAR 1983

Identification code	21-2034-0-1-051	Budget Plan (amounts for PROCUREMENT actions programmed)		Obligations	
		1987 actual	1988 est.	1987 actual	1988 est.
Financing:					
17.0001	Recovery of prior year obligations			-19,479	
	Unobligated balance available, start of year:	-19,479			
21.4007	Reprogramming from/to prior year budget plan	19,479		19,479	
22.4001	Unobligated balance transferred to other acc				
39.0001	Budget authority				

Procurement of Ammunition, Army
Program and Financing (in thousands of dollars) FISCAL YEAR 1985

Identification code	21-2034-0-1-051	Budget Plan (amounts for PROCUREMENT actions programmed)			Obligations		
		1987 actual	1988 est.	1989 est.	1987 actual	1988 est.	1989 est.
Program by activities:							
Direct program:							
00.0101	Ammunition				35,096		
00.0201	Ammunition production base support				14,769		
00.9101	Total direct program				49,865		
01.0101	Reimbursable program				247		
10.0001	Total				50,112		
Financing:							
Of setting collections from:							
11.0001	Federal funds(-)				105		
13.0001	Trust funds(-)				5		
17.0001	Recovery of prior year obligations				-45,501		
21.4002	Unobligated balance available, start of year:						
21.4003	For completion of prior year budget plans				-30,497		
21.4007	Available to finance new budget plans				-33,000		
22.4001	Reprogramming from/to prior year budget plan				-33,000		
22.4001	Unobligated balance transferred to other acc				16,670		
25.0001	Unobligated balance lapsing				9,106		
40.0017	Budget authority (Appropriation rescinded)				-33,000		

4-6 February 1988

Procurement of Ammunition, Army
Program and Financing (in thousands of dollars) FISCAL YEAR 1986

Identification code	21-2034-0-1-051	Budget plan (amounts for PROCUREMENT actions programmed)			Obligations	
		1987 actual	1988 est.	1989 est.	1987 actual	1988 est. 1989 est.
Program by activities:						
Direct program:						
00.0101	Ammunition				184,844	14,022
00.0201	Ammunition production base support				154,570	126,450
00.9101	Total direct program				339,414	140,472
01.0101	Reimbursable program				677	1,455
10.0001	Total				340,091	141,927
Financing:						
Offsetting collections from:						
11.0001	Federal funds(-)				804	
13.0001	Trust funds(-)				649	
14.0001	Non-Federal sources(-)				35	
17.0001	Recovery of prior year obligations				-90,596	
21.4002	Unobligated balance available, start of year:				-392,910	-141,927
21.4003	for completion of prior year budget plans				-39,562	
21.4003	Available to finance new budget plans	39,562				
24.4002	Unobligated balance available, end of year:				141,927	
24.4002	for completion of prior year budget plans					
40.0017	Budget authority (Appropriation rescinded)	-39,562			-39,562	

4-7 February 1988

Procurement of Ammunition, Army
Program and Financing (in thousands of dollars) FISCAL YEAR 1987

Identification code	21-2034-0-1-051	Budget plan (amounts for PROCUREMENT actions programmed)			Obligations		
		1987 actual	1988 est.	1989 est.	1987 actual	1988 est.	1989 est.
Program by activities:							
Direct program:							
00.0101	Ammunition	1,731,989			1,680,291	7,474	44,224
00.0201	Ammunition production base support	348,088			297,694	41,692	8,702
00.9101	Total direct program	2,080,077			1,977,985	49,166	52,926
01.0101	Reimbursable program	35,326			28,857	6,469	
10.0001	Total	2,115,403			2,006,842	55,635	52,926
Financing:							
Offsetting collections from:							
11.0001	Federal funds(-)	-30,835			-30,835		
13.0001	Trust funds(-)	-4,414			-4,414		
14.0001	Non-federal sources(-)	-77			-77		
21.4002	Unobligated balance available, start of year:						
21.4003	For completion of prior year budget plans		-7,200			-108,561	-52,926
21.4003	Available to finance new budget plans					-7,200	
24.4002	Unobligated balance available, end of year:						
24.4003	For completion of prior year budget plans	7,200			108,561	52,926	
24.4003	Available to finance subsequent year budget				7,200		
39.0001	Budget authority	2,087,277	-7,200		2,087,277	-7,200	
Budget authority:							
40.0001	Appropriation	2,087,150			2,087,150		
40.0017	Appropriation rescinded		-7,200			-7,200	
42.0001	Transferred from other accounts	127			127		
43.0001	Appropriation (adjusted)	2,087,277	7,200		2,087,277	-7,200	

Procurement of Ammunition, Army
Program and Financing (in thousands of dollars) FISCAL YEAR 1988

Identification code	21-2034-0-1-051	Budget Plan (amounts for PROCUREMENT actions programmed)			Obligations	
		1987 actual	1988 est.	1989 est.	1987 actual	1988 est. 1989 est.
Program by activities:						
Direct program:						
00.0101	Ammunition		1,845,650		1,759,769	45,177
00.0201	Ammunition production base support		427,942		387,628	23,130
00.9101	Total direct program		2,273,592		2,147,397	68,307
01.0101	Reimbursable program		41,900		41,900	
10.0001	Total		2,315,492		2,189,297	68,307
Financing:						
Offsetting collections from:						
11.0001	Federal funds(-)		-32,500		-32,500	
13.0001	Trust funds(-)		9,400		-9,400	
21.4002	Unobligated balance available, start of year:					-126,195
21.4002	For completion of prior year budget plans				126,195	57,888
24.4002	Unobligated balance available, end of year:					
24.4002	For completion of prior year budget plans				2,273,592	
40.0001	Budget authority (Appropriation)		2,273,592			

4-9 February 1988

Procurement of Ammunition, Army
Program and Financing (in Thousands of dollars) FISCAL YEAR 1989

Identification code	21-2034-0-1-051	Budget Plan (amounts for PROCUREMENT actions programmed)			Obligations	
		1987 actual	1988 est.	1989 est.	1987 actual	1988 est. 1989 est.
Program by activities:						
Direct program:						
00.0101	Ammunition			1,799,950		1,699,738
00.0201	Ammunition production base support			207,850		196,522
00.9101	Total direct program			2,007,800		1,896,260
01.0101	Reimbursable program			38,800		38,800
10.0001	Total			2,046,600		1,935,060
Financing:						
Offsetting collections from:						
11.0001	Federal funds(-)			-28,700		-28,700
13.0001	Trust funds(-)			-10,100		-10,100
24.4002	Unobligated balance available, end of year: For completion of prior year budget plans					111,540
40.0001	Budget authority (Appropriation)			2,007,800		2,007,800

PROCUREMENT OF AMMUNITION, ARMY

Section 2:

Budget Activity Justification

Activity 1 - Ammunition

Activity 2 - Ammunition Production Base Support

4-11 February 1988

Department of the Army Amended Budget Estimate JUSTIFICATION	Appropriation PROCUREMENT OF AMMUNITION, ARMY		Amended FY 1989 Budget	
	(Thousands of Dollars)			
Budget Program	Actual	Estimate	Initial Estimate	Amended Estimate
Activity 1 - Ammunition	FY 1987	FY 1988	FY 1989	FY 1989
Direct Budget Plan	\$1,731,989	\$1,845,650	\$1,914,063	-114,113 \$1,799,950

Part 1 - PURPOSE AND SCOPE

The Amended FY 1989 President's budget contains an ammunition program that provides for worldwide training consumption, improvements in near-term readiness and combat sustainability, and the acquisition of war reserve stocks for use during wartime. Families of ammunition included in the request are artillery, mortar, tank, small arms, rockets, mines, countermines, propelling charges, and other ammunition items. Portions of the funds being requested are identified to recently developed tank rounds and improved artillery ammunition.

The Amended FY 1989 budget request is \$114.1 million less than the FY 1989 column of the FY 1988/89 submission. The four driving forces that shaped the Amended FY 1989 request are 1) significant reductions in Army Total Obligational Authority (TOA), 2) maximizing warfighting capability within TOA constraints, 3) increased emphasis on training, which is the Army's theme for 1988, and 4) supporting new systems fielding with more capable ammunition.

Part 2 - JUSTIFICATION OF FUNDS REQUESTED

The FY 1989 program provides for worldwide training consumption and losses to inventory through FY 1989 funded delivery period, increases U.S. Army readiness in support of the FY 1992 authorized acquisition objectives and maintains an active ammunition-production base for modernization, critical war stopper rounds, and training ammunition. The following table depicts the ammunition program by major categories.

<u>Ammunition Categorization</u> (Thousands of Dollars)			
	<u>FY 1988</u>	<u>FY 1989 Request</u>	<u>Amended FY 1989</u>
Small Arms	178.0	255.7	207.0
Mortars	130.3	55.1	65.9
Tank/Combat Engr. Veh.	351.1	325.0	331.1
Artillery	620.2	619.3	530.2
Charges	128.6	116.0	158.7
Fuze	54.9	55.4	39.1
Rockets	125.2	165.6	150.5
Mine/Countermine	130.0	153.2	159.8
Other	103.7	151.4	104.8
Non-Hardware	23.7	17.4	52.8
Total	<u>1,845.7</u>	<u>1,914.1</u>	<u>1,799.9</u>

4-13 February 1988

Part 2 - JUSTIFICATION OF FUNDS REQUESTED (Continued)

Procurement new starts in FY 1989 include the Electronic Time Fuze for improved artillery capability, 20mm Multi-Purpose XM940 cartridge for Vulcan cannon and the 120mm M829 improved anti-tank munition. Details on these programs are included in the following table of the FY 1988/89 program, which depicts the individual programs that make up the major categories.

4-14 February 1988

ITEM BREAKOUT, FY 1988/89

<u>TYPE</u>	<u>\$ (Millions)</u>	<u>REMARKS</u>
<u>Small Arms Ammunition</u>	<u>(FY 1988, \$178.0 Million; FY 1989, \$207.0 Million)</u>	
	<u>FY 1988</u>	<u>FY 1989</u>
10 Gage Shotgun Cartridge	.2	The FY 1989 requested procurement supports reveille and retreat salute as well as training requirement with the procurement of 372,000 rounds.
12 Gage Shotgun Cartridge	.1	The FY 1989 request supports training requirements with the procurement of 340,000 rounds.
Cal .22 Cartridge	.2	The requested procurement supports training requirements. The FY 1989 request is for 6,755,000 rounds of the caliber .22 ball cartridges.
5.56mm Cartridge	49.6*	FY 1988 and FY 1989 includes funding for 5.56mm Ball, Tracer, and Blank ammunition for the M-16 rifle and Squad Automatic Weapon (SAW) in support of both war reserve and training requirements. The FY 1989 request is for 333,518,000 rounds of various types of 5.56mm cartridges.
7.62mm Cartridge	28.6**	FY 1988 and FY 1989 includes Ball, Tracer and Match ammunition for war reserves and training requirements. The FY 1989 program is for 157,064,000 rounds of various types of 7.62mm cartridges.
Cal .38 Cartridge	.2	The FY 1989 of 2,049,000 cartridges supports both war reserve and training requirements.

* \$0.2 Million in FY 1988 and \$0.7 Million in FY 1989 included in Items Under \$2 million line item.
 ** \$1.3 Million in FY 1988 and \$1.3 Million in FY 1989 included in Items Under \$2 million line item.

TYPE	\$ (Millions)		REMARKS
	FY 1988	FY 1989	
9mm Cartridge		.6	The FY 1989 request for 6,000,000 cartridges supports both war reserve and training requirements.
Cal .45 Cartridge	1.5*	1.5*	The FY 1989 request supports war reserve and training requirements with the procurement of 13,852,000 cartridges.
Cal .50 Cartridge	2.7**	3.5**	The FY 1989 request supports training requirements with the procurement of 3,228,000 rounds.
20mm Cartridge	16.7	11.1***	The requested procurement supports training requirements. The FY 1989 request is for 3,028,000 rounds.
25mm Cartridge	26.0	55.4	The FY 1989 request includes the Target-Practice Tracer (TP) and Armor Piercing (AP) rounds in support of training requirements for the Bradley Fighting Vehicle. The FY 1989 request is for 3,499,000 rounds. The previously planned 25mm High Explosive Incendiary Tracer (HEIT) program was deferred in the Amended FY 1989 request pending resolution of M758 fuze problem.
30mm Cartridge	-	6.0	The FY 1989 budget request is for 634,000 Target-Practice (TP) rounds in support of training requirements for the AH-64 helicopter.

*\$.2 Million in FY 1988 and \$.2 in FY 1989 included in Items Under \$2 million line item.
 **\$.4 Million in FY 1988 and \$.1 Million in FY 1989 included in Items Under \$2 million line item.
 ***1.9 Million in FY 1989 included in Items Under \$2 million line item.

40mm Cartridge

52.5*

31.5

The FY 1989 budget request is for 40mm High-Explosive Dual-Purpose (HEDP) High-Velocity ammunition, smoke and training rounds used in the MK19 machine gun and M203 grenade launchers attached to the M16/M16A1 rifle. The request is for 4,770,000 rounds in FY 1989.

*\$3.0 Million in FY 1988 and \$.9 Million in FY 1989 included in Items Under \$2 million line item.

4-17 February 1988

<u>TYPE</u>	<u>\$ (Millions)</u>		<u>REMARKS</u>
	<u>FY 1988</u>	<u>FY 1989</u>	
<u>Mortar Ammunition (FY 1988, \$130.3 Million; FY 1989, \$65.9 Million)</u>			
60mm (LWOMS) Cartridges	39.1	4.0	The FY 1988 supports war reserve and training requirements for the M720 High Explosive, M721 Illumination, and M722 Smoke rounds for the Lightweight Company Mortar System (LWOMS) in support of the Army's Light Infantry Division. The FY 1989 request continues the procurement of the M722 Smoke cartridge.
81mm (Improved) Cartridges	65.0	4.5	FY 1988 included the 81mm High-Explosive (HE) rounds in support of war reserve requirements for the improved 81mm mortar system. The FY 1989 procurement supports annual training and the depot level requirements for the M880 1/10 range mortar practice round with refurbishing kits.
4.2-Inch Cartridges	19.7	57.4	The FY 1988 procurement of 180,000 cartridges of 4.2-inch HE M329A2 support war reserve and training requirements. The FY 1989 request continues the procurement of 200,000 HE cartridge and also procures 193,000 illuminating cartridge in support of sustainability and training requirements. The 4.2-Inch mortar systems will continue to be the Army's heavy mortar system based on the deletion of FY 1989 funds for the new 120mm mortar system.
120mm Mortar Cartridges	6.5	-	The FY 1988 program is for High Explosive, and 1/10 range practice rounds.

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<u>TYPE</u>	<u>\$ (Millions)</u>		<u>REMARKS</u>
	<u>FY 1988</u>	<u>FY 1989</u>	
<u>Tank Ammunition and Combat Engineering Vehicle (FY 1988, \$351.1 Million; FY 1989, \$331.1 Million)</u>			
105mm Tank Ammunition	62.9	40.7	The budget request includes Discarding Sabot-Target Practice (DS-TP) and Target Practice with Tracer (TPT) cartridges for training requirements. The FY 1989 request is for 120,000 105mm TPT cartridges in the amount of \$14.9 million and 176,000 105mm DS-TP cartridges in the amount of \$25.8 million.
120mm Tank Ammunition	277.5	280.0	The budget request includes Armor-Piercing Fin Stabilized Discarding Sabot-Tracer (APFSDS-T) and High Explosive Anti-Tank (HEAT) rounds to support war reserve objectives, and DS-TP and Target Practice Cone-Stabilized Discarding Sabot-Tracer (TPCSDS-T) rounds for training requirements. The FY 1989 request is for 57,000 120mm APFSDS-T cartridges, \$130.6 million; 17,000 120mm HEAT cartridges, \$29.5 million; 50,000 120mm TP-T, \$44.2 million; and 117,000 120mm TPCSDS-T cartridges, \$75.7 million. The requested program is required to support the fielding of the M1A1 tank with ammunition capable of defeating threat armor and provide tank gunnery training with the M1A1 tank in support of our readiness objectives. In the Amended FY 1989 request, the 120mm M829 improved munition was increased by \$45.0 million over last year's FY 1989 column based on criticality of deployment.

TYPE	<u>\$ (Millions)</u>		REMARKS
	<u>FY 1988</u>	<u>FY 1989</u>	
35mm Subcaliber for Tank	2.0	5.5	The FY 1989 request is for 120,000 rounds to support tank training requirements in support of M1A1 tank crew proficiency in Europe.
Grenade, Smoke Screening	8.7	4.9*	Electrically initiated smoke screening grenades are used by armored vehicles to conceal themselves from enemy observation. The FY 1989 request is for 104,000 grenades.
<u>Artillery Ammunition (FY 1989, \$620.2 Million; FY 1989, \$530.2 Million)</u>			
105mm Artillery Ammunition	21.7	-	The FY 1988 program includes the acquisition of M314 illumination, and M395 blank rounds to support training and salute requirements.
155mm HE, ICM (DP)	98.7	103.2	This High Explosive (HE), Improved Conventional Munition (ICM) projectile is a dual-purpose (DP) anti-armor/anti-personnel round. Funding is required to complete Mississippi Army Ammunition Plant prove out (demonstrate capability for production) and build war reserve sustainability. The FY 1989 request is for 221,000 projectiles. The projectile, containing 88 dual-purpose submunitions, is fired over an enemy target area. At the specified time, a fuze initiates the expulsion charge and ejects the submunitions to descend on the target area where detonation occurs on impact. The Amended FY 1989 request is for sufficient production quantity to show that the Mississippi Army Ammunition Plant (MSAAP) is capable of rate production before the M483 production line is closed at MSAAP.

*Included in the Grenades All Types line item in FY 1989.

<u>TYPE</u>	<u>\$ (Millions)</u>	<u>REMARKS</u>
<u>FY 1988</u>	<u>FY 1989</u>	
155mm ADAM/RAAMS	45.7	<p>The Area Denial Artillery Munition (ADAM) and Remote Anti-Armor Mine Systems (RAAMS) projectiles are artillery delivered mines, which provide the field commander with a quick-reaction defensive or offensive mine system to oppose dismounted enemy forces or mounted armor attacks. The ADAM and RAAMS projectiles are deployed together in order to lay a minefield in accordance with the mine/barrier emplacement strategy. The ADAM projectile contains 36 anti-personnel mines, while the RAAMS projectile contains nine anti-armor mines. After projectile firing, the mines are ejected over the target area. Upon reaching the ground, individual ADAM mines eject trip wires and function when disturbed. The RAAMS mines function when the presence of an armored vehicle is detected or when disturbed. Both mines incorporate a factory set self-destruct feature, which allows for movement of friendly troops through the mine area after a predetermined period. Both ADAM and RAAMS have two projectile model numbers to distinguish between available self-destruct time options.</p> <p>Funding is required to support war reserve objectives. The FY 1989 request is for 13,000 155mm HE, ADAM M731 projectiles in the amount of \$51.5 million; 19,000 155 HE RAAMS M718 and 18,000 M741 projectiles in the amount of \$43.5 million. The RAAMS procurements have been increased in the Amended FY 1989 request in order to provide a better balance of ADAM and RAAMS mix, and in support of the mine/barrier emplacement strategy.</p>

<u>TYPE</u>	<u>\$ (Millions)</u>		<u>REMARKS</u>
	<u>FY 1988</u>	<u>FY 1989</u>	
155mm Copperhead	117.9	-	The FY 1988 program is for 2,900 projectiles in support of war reserve requirements for the 155mm Copperhead projectile. The FY 1989 program has been deleted based on affordability considerations.
155mm Smoke	23.4	19.5	The 155mm smoke round provides a smoke screening capability with the 155mm howitzer. The FY 1988 and FY 1989 procurement of 65,000 and 60,000 projectiles, respectively, are required to support war reserve objectives and training.
155mm Illumination	43.6	-	The M485 illumination round is being procured to meet war reserve stockpile requirements for battlefield illumination and support peacetime training. FY 1988 is for 190,000 projectiles to support training requirements.
155mm Training	14.5	15.7	The request supports acquisition of the low noise M804 artillery training projectile, required to support training in U.S. Army Europe (USAREUR) and U.S. at training areas with environmental noise limitations. The FY 1989 request is for 121,000 projectiles.
155mm Basebleed	70.1	111.7	This High Explosive (HE), Improved Conventional Munitions (ICM) projectile is a dual purpose (DP) anti-armor/anti-personnel round. Funding is required to meet war reserve sustainability objectives. This round differs from the basic M483 ICM round in that it has extended range capabilities. The FY 1988 and FY 1989 procurement of 91,000 and 149,000 projectiles, respectively, support war reserve needs.

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<u>TYPE</u>	<u>\$ (Millions)</u>	<u>REMARKS</u>
	<u>FY 1988</u>	<u>FY 1989</u>
8-Inch Rocket Assisted Projectile (RAP)	42.4	37.0
		The M650 RAP is an extended range projectile for use with the 8-inch self-propelled howitzer. The round can be employed with or without use of the rocket motor. For extended range the rocket motor cap is removed, and the round is fired. The rocket motor ignites and boosts the round, thus extending its normal ballistic trajectory. The FY 1988 procurement of 43,000 rounds in the amount of \$42.4 million and the FY 1989 procurement of 36,000 rounds in the amount of \$37.0 million supports war reserve requirements.
155mm Binary Projectile	*	*
		The FY 1988 and FY 1989 procurement continues the war reserve acquisition of the 155mm binary chemical projectile that was begun with the FY 1986 budget. This round is required to provide a modern, safe binary chemical deterrent stockpile to replace the less effective and increasingly environmentally hazardous unitary stockpile.
Primer, Percussion	2.6	.7
		The M82 percussion primer is used to initiate 155mm and 8-inch propelling charges that propel the artillery projectiles to their targets. The FY 1988 and FY 1989 programs are required to balance primers to inventories of 155mm and 8-inch projectiles that support war reserve and training requirements.
Nuclear Materiel	*	*
		The FY 1988 and FY 1989 program includes funding for support materiel and the 155mm nuclear projectile.

*Amount is classified.

<u>TYPE</u>	<u>\$ (Millions)</u>		<u>REMARKS</u>
	<u>FY 1988</u>	<u>FY 1989</u>	
<u>Propelling Charges (FY 1988, \$128.6 Million; FY 1989, \$158.7 Million)</u>			
155mm Propelling Charges	128.6	158.7	The 155mm propelling charges are procured to balance with inventories of 155mm projectiles procured in support of war reserve and training requirements. The FY 1989 request is for 553,000 155mm propelling charges. The M119 propelling charge procurement has been added in the Amended FY 1989 request in order to provide a better balance of appropriate charges to projectiles.

<u>FUZES (FY 1988, \$54.9 Million; FY 1989, \$39.1 Million)</u>		
	<u>FY 1988</u>	<u>FY 1989</u>
Fuze, Mechanical Time, Super Quick	54.9	15.9

The mechanical time, super quick fuzes, designated as the M577/M577A1 and the M582/M582A1, are used in the 155mm and 8-inch Improved Conventional Munition (ICM) High-Explosive and Rocket-Assisted Projectiles, as well as in the registration round for the 8-inch nuclear projectile. These fuzes are used when a choice of timed or super-quick action is required. The internal mechanism controls the detonation of the round or the expulsion of the projectile's cargo after the round is fired if the timing function is selected. If set for super-quick action, the projectile detonates upon impact. The FY 1989 request is for 207,000 fuzes. The FY 1988 and FY 1989 programs are required to correct the existing fuze to projectile imbalance and support war reserve objectives.

TYPE	\$ (Millions)		REMARKS
	FY 1988	FY 1989	
Fuze, Electronic Time	-	23.2	The budget request includes procurement of initial war reserve stockpile of 161,000 fuzes for the 105mm, 155mm and 8-Inch improved conventional munitions. The Amended FY 1989 request reflects the fuze transition strategy from the older M577/M577A1 mechanical to the newer electronic time fuze, which offers easier handsetting without external setters and provides for a more easily expandable production base using state-of-the-art electronics technology.
<u>ROCKETS (FY 1988, \$125.2 Million; FY 1989, \$150.5 Million)</u>			
HYDRA 70 Rockets	58.8	69.9	The Hydra 70 provides both attack and self-defense capabilities for Apache and modernized Cobra helicopters against personnel, materiel, armor and enemy helicopters. The FY 1988 and 1989 Program includes Hydra 70 High Explosive (HE) and practice rounds to support war reserve and training requirements. The FY 1989 request reflects the shift in training requirements from the older Hydra 70 HE with point detonating fuze to the newer Hydra 70 M274 rocket. The latter is preferred for most training and required on instrumented ranges.
Lightweight Multi-Purpose System	60.1	74.8	The Lightweight Multi-Purpose Weapon System (AT-4) is a shoulder-fired, tactical munition designed for multiple roles against materiel and lightly armored vehicles. The FY 1988 Program is for 74,000 AT-4 rounds at \$60.1 million. The FY 1989 request is for 77,000 AT-4 rounds in the amount of \$71.6 million and 5,591,000 trainers in the amount of \$3.3 million. This round was transitioned to on shore procurement with the FY 1987 procurement.

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<u>TYPE</u>	<u>\$ (Millions)</u>		<u>REMARKS</u>
	<u>FY 1988</u>	<u>FY 1989</u>	
Rocket, Tng, Practice, 35mm	6.3*	5.8*	The FY 1989 budget request includes 511,000 rounds to support training requirements.
<u>MINES/COUNTERMINES (FY 1988, \$130.0 Million; FY 1989, \$159.8 Million)</u>			

Mine/Countermine	130.0**	159.8*	Mines include the Modular Pack Mine System (MOPMS) and Volcano, which is a helicopter or ground dispensed mine system similar to GATOR. The Volcano mine system is the center piece of the Army mine program. The Amended FY 1989 request for Volcano has been increased by \$28.3 million in order to produce at two shift operations in order to expedite delivery of this critically needed mine field capability. All are scatterable mine systems and contain both antipersonnel and antitank mines. Also included are the drill mines to support training with the Volcano dispensing system. In addition, the FY 1989 request includes the Mine Clearing Line Charge (MICLIC) system and associated 5-inch rocket motor, a rocket device designed to breach paths through enemy mine fields and obstacles.
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*Included in the Demolition Munitions item line.

**Includes \$1.2 million in FY 1988 and \$1.7 million in FY 1989 in Items Under \$2 million item item.

4-26 February 1988

TYPE	\$ (Millions)		REMARKS
	FY 1988	FY 1989	
<u>OTHER (FY 1988, \$103.7 Million; FY 1989, \$104.8 Million)</u>			
Grenades, All Types	1.7	1.9	The FY 1989 request includes practice, smoke and fragmentation grenades.
Signals, All Types	16.0	1.2	The FY 1989 budget request includes colored smoke signals and smoke pots for both war reserves and training.
Simulators, All Types	6.4	4.1	A number of different types of simulators is included in this request in support of training. These devices lend battlefield realism to training exercises without the associated cost, safety, and environmental impacts of live-fire training.
Demolition Munitions & Other	21.9	16.6	This line includes demolition charges, cratering kits, blasting caps, igniters, and blasting time fuze.
60mm Metal Parts	9.6	-	The FY 1988 program procures metal parts for 60mm mortars and workloads Riverbank Army Ammunition Plant.
M42/M46 Grenade Parts	13.3	-	The FY 1988 program procures grenade parts for the for M483 155mm M483 round and workloads Riverbank Army Ammunition Plant.
Linear Shaped Charge Special Operating Force (SOF)	.3	2.8	The FY 1988 and FY 1989 program supports the SOF war reserve requirement.

4-27 February 1988

TYPE	\$ (Millions)		REMARKS
	FY 1988	FY 1989	
<u>OTHER (FY 1988, \$103.7 Million; FY 1989, \$104.8 Million) (Continued)</u>			
Nitroguanidine	12.8	15.8	Nitroguanidine is a colorless, crystalline compound required in production of the triple-base propellant used in extended-range propelling charges for artillery and tank ammunition. The FY 1989 request continues production to meet Army requirements and meet economic production at Sunflower Army Ammunition Plant, which is only U.S. source for this critical ingredient.
Ammunition, Support	21.7	27.4	The FY 1989 budget request includes funding for components/support items for special tests, renovation of field stock and war reserve rounds on pre-positioned ships, and weapons components in support of proof and acceptance testing.
War Reserve Stockpiling	-	35.0	The FY 1989 funding is requested to procure explosives and propellants in support of the Department's sustainability objectives. These products would be used primarily to meet mobilization requirements until production could be expanded to meet wartime requirements. In the event of a catastrophic explosives/propellants plant failure, specific items could be used until production could be resumed. The Army plans to stockpile composition A5 and C4, HMX and PBX.
<u>NON-HARDWARE (FY 1988, \$23.7 Million; FY 1989, \$52.8 Million)</u>			
Non-Hardware	23.7*	52.8*	Funding in support of equipment unique to ammunition production/depot operations, Host Nation Support agreement, spares and repair parts, and other small ammunition programs are included in FY 1988 and the Amended FY 1989 budget request.

*Includes \$.7 million in FY 88 and 2.7 million in FY 1989 in Items Under \$2 million item.

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WAR RESERVE AMMUNITION, TRAINING AMMUNITION AND NON-HARDWARE PROGRAMS, FY 1988 AND FY 1989
(\$ MILLIONS)

War Reserve Ammunition:	FY 1988	FY 1989
Training Ammunition:	1257.5	1184.6
Non-Hardware Programs:	514.6	524.9
	73.6	90.5
	<u>1845.7</u>	<u>1799.2</u>

In order to support worldwide training consumption and increase U.S. Army readiness, the following ammunition is being procured:

AMMUNITION	FY 1988		FY 1989	
	QUANTITY (THOUSANDS)	DOLLARS (MILLIONS)	QUANTITY (THOUSANDS)	DOLLARS (MILLIONS)
Cartridge, 5.56mm Ball	57,542	8.2	60,000	7.4
Cartridge, 5.56mm Tracer	4,535	1.1	4,535	1.1
Cartridge, 5.56mm Blank	155,915	16.3	70,159	6.3
Cartridge, 5.56mm Blank for Squad	32,209	5.9	-	
Automatic Weapon				
Cartridge, 5.56mm Ball M16/A2	36,490	8.1	145,000	28.9
Cartridge, 5.56mm Tracer M16A2	10,336	3.1	10,336	3.2
Cartridge, 5.56mm Plastic	8,000	2.7	6,874	2.2
Cartridge, 5.56mm Tracer Clip	1,929	.5	2,309	.5
Cartridge, 7.62mm Linked 4 Ball/Tracer	52,360	14.3	40,537	10.7
Cartridge, 7.62mm Ball Linked	-	-	58,560	14.4
Cartridge, 7.62mm Special Match	885	.3	1,211	.4
Cartridge, 7.62mm Blank Linked	52,683	13.0	48,006	10.8
Cartridge, 7.62mm Special Ball	3,469	1.0	3,654	.9
Cartridge, 7.62mm Ball QHP	-	-	5,014	1.5
Cartridge, Caliber .22 Ball LR Match	3,400	.2	6,755	.3
Cartridge, Caliber .38 Special Ball Wadcutter	-	-	1,246	.1
Cartridge, Caliber .38 Special Ball	1,736	.2	803	.1
Cartridge, Caliber .45 Ball	11,540	1.3	11,765	1.3
Cartridge, Caliber .45 Ball Wadcutter	-	-	789	.1
Cartridge, Caliber .45 Match	1,539	.2	703	.1
Cartridge, 10 Gage Blank	-	-	372	.2
Cartridge, 12 Gage Shotgun 00	-	-	200	.1
Cartridge, Caliber .50 Plastic	1,810	2.3	2,765	3.0
Cartridge, Caliber .50 Blank Linked	-	-	345	.3
Opposing Force Ammunition	-	-	-	7.0

	FY 1988		FY 1989	
	QUANTITY (THOUSANDS)	DOLLARS (MILLIONS)	QUANTITY (THOUSANDS)	DOLLARS (MILLIONS)
<u>AMMUNITION</u>				
Cartridge, Caliber .50 Dummy	200	.3	-	-
Cartridge, 20mm 4 Target-Practice Tracer M55A2 TP-T M220	1,388	4.0	1,004	2.9
Cartridge, 20mm Linked Target-Practice Tracer M220	3,701	12.6	1,904	6.3
Cartridge, 25mm, AP Training	602	15.0	2,354	45.0
Cartridge, 25mm Target Practice-Tracer	1,080	11.0	1,145	10.2
Cartridge, 30mm Target Practice	-	-	634	6.0
Cartridge, 40mm TP F/MK19	2,375	28.5	-	-
Cartridge, 40mm Target Practice	1,838	3.2	2,468	3.4
Cartridge, 40mm White Star Parachute	47	1.1	-	-
Cartridge, 40mm Green Star Parachute	13	.2	13	.2
Cartridge, 40mm Red Smoke Marker	9	.1	7	.1
Cartridge, 40mm Green Smoke Marker	14	.2	-	-
Cartridge, 40mm Yellow Smoke Marker	10	.2	13	.2
Cartridge, 40mm Red Star Parachute	7	.1	7	.1
Primer, M82	493	.9	362	.7
Lightweight Multipurpose Weapon System	10	8.1	10	9.3
Lightweight Multipurpose Weapon Trainer	-	-	5,591	3.3
Hydra 70 Rocket, HE/FS	12	5.2	14	6.0
Hydra 70 Rocket, MP5M Practice	27	14.1	8	3.8
Hydra 70 Rocket, M274 Practice	105	30.0	154	44.3
Hydra 70 Rocket, HE/PD	21	6.9	17	5.2
Grenade, Hand, Green Smoke, M18	127	1.5	-	-
Rocket, Tng, 35mm Practice	570	6.3	511	5.8
Fuze, Hand Grenade, Practice	249	.2	1,815	1.9
Smoke Pot, Floating	24	4.0	-	-
Signal Kit, Personnel Distress	-	-	4	.1
Signal Illuminating, Ground, White Star Cluster	32	.8	27	.7
Signal, Illuminating, Ground, Green Star	58	1.4	-	-
Flare Surface Trip	59	1.2	-	-
Simulator, Projectile, Ground Burst	399	2.9	-	-
Simulator, Flash, Artillery (WESS)	83	.2	889	2.0

	FY 1988		FY 1989	
	QUANTITY (THOUSANDS)	DOLLARS (MILLIONS)	QUANTITY (THOUSANDS)	DOLLARS (MILLIONS)
AMMUNITION				
Simulator, Hand Grenade	435	3.1	349	2.0
Simulator, Booby Trap, Whistling	152	.3	-	-
Cord, Detonating, Type 1	-	-	3,256	.2
Charge, Demolition, Block Comp C-4	-	-	85	.3
Demolition Kit, Cratering, M180	223	.5	223	.5
Charge, Demolition Shaped 40lb.	6	2.1	-	-
Demolition Kit Bangalore Torpedo	-	-	4	1.9
Cap, Blasting M6 Special Non-Electric	171	.5	-	-
Cap, Blasting M7 Special Non-Electric	-	-	204	.2
Energy Cartridge, Anti-personnel Practice	22	.1	31	.1
Energy Cartridge, Anti-tank Practice	12	.1	18	.1
Fuze Mechanical, Time, Super Quick M582	155	9.3	132	10.3
Fuze Mechanical, Time, Super Quick M77	61	3.5	62	4.7
Igniter, Fuze Blasting	-	-	159	.3
Cartridge, 105mm, Discarding Sabot-Target	162	25.4	176	25.8
Practice				
Cartridge, 105mm, Target Practice-Tracer	41	4.9	120	14.9
Cartridge, 120mm Target Practice-Tracer	68	63.6	50	44.2
Cartridge, 120mm Target Practice Cone-Stabilized-	114	83.7	117	75.7
Discarding-Sabot-Tracer				
Cartridge, Subcal 35mm f/Tank	40	2.0	112	5.5
Cartridge, 60mm, Smoke WPLWOMS	5	.5	5	.6
Cartridge, 60mm, Illum LWOMS	8	1.3	-	-
Cartridge, 60mm, HE	8	.7	-	-
Cartridge, 81mm, Improved 1/10 Range Training	34	4.8	19	4.5
Cartridge, 81mm, Improved High-Explosive	28	6.2	-	-
Cartridge, 4.2-Inch HE	180	19.7	200	20.0
Cartridge, 4.2-Inch Illum	-	-	193	37.4
Mine, Anti-personnel, Practice	62	4.8	-	-
Cartridge, 105mm, Blank, M395	127	3.1	-	-
Cartridge, 105mm, Illum, M314	32	7.1	-	-
Cartridge, 155mm, Illum, M485	37	8.5	-	-
Cartridge, 120mm, TNG, 1/10 Rng	16	2.1	-	-
Cartridge, 155mm, Tng	113	14.5	121	15.7
Canister Mine, Practice	1	.6	8	2.4
Line Charge, Inert M68	116	1.2	177	1.7
Rocket Motor, Mine-Clearing-Line-Change	487	1.9	740	2.5
TOTAL		514.6		524.9

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Department of the Army Amended Budget Estimate JUSTIFICATION	Appropriation PROCUREMENT OF AMMUNITION, ARMY		Amended FY1988/89 Budget	
	Actual	Estimate	Initial Estimate	Amended Estimate
<u>Budget Program</u>	<u>(Thousands of Dollars)</u>			
Activity 2 - Ammunition Production Base Support	FY 1987	FY 1988	FY 1989	FY 1989
DIRECT BUDGET PLAN	348,088	427,942	280,692	-72,842 207,850

Part 1 - PURPOSE AND SCOPE

The Amended FY1988/FY1989 President's biennial budget contains an ammunition production base support program that provides for the support of plants in active production and required for mobilization; the establishment of initial-production facilities, modernization, and expansion of production capability for ammunition; modernization of Jefferson Proving Ground; layaway of industrial plants and equipment, which is the procedure associated with placing a previously active production facility or line into inactive status; and components for prove-out, which refers to the procedures associated with demonstrating that a production facility or line is capable of manufacturing the ammunition item.

PROCUREMENT OF AMMUNITION, ARMY
PRODUCTION BASE SUPPORT

Part 2 - JUSTIFICATION OF FUNDS REQUESTED
(Dollars in Millions)

	<u>FY1987</u>	<u>FY1988</u>	<u>FY1989</u>
<u>Provision of Industrial Facilities (PIF)</u>	139.3	137.5	172.8
Production Support and Equipment			
Replacement (PS&ER)	(39.7)	(36.3)	(42.0)
Initial Production Facilities (IPF)	(18.6)	(8.1)	(3.4)
Modernization (MOD)	(45.3)	(50.5)	(75.8)
Expansion (EXP)	(35.7)	(42.6)	(51.6)
<u>Production Base Modernization</u>	177.3		
<u>Jefferson Proving Ground Modernization</u>	2.2		1.0
<u>Layaway of Industrial Facilities</u>	20.7	19.4	19.6
<u>Prove-out of Production Facilities</u>	8.6	8.3	14.4
<u>ROX Facility</u>			262.7
<u>Chemical Demilitarization Program</u>			
<u>Ammunition Production Base Support Total</u>	348.1	427.9	207.8

Provision of Industrial Facilities

(\$ Thousands)

Actual	Amended
FY1988	FY1989
137,561	172,831

Funds requested for Provision of Industrial Facilities provide industrial capabilities for manufacturing new or existing ammunition. The major efforts are divided among initial-production capability for new items entering the inventory, expansion of existing capacity to meet either peacetime or mobilization requirements, and finally modernization of existing facilities to adjust to new technology and changing ammunition requirements. The majority of funds requested are concentrated in modernization and expansion efforts. In FY 1988 \$111.3 million (including construction), was appropriated for modernization, expansion and initial production facilities. The Amended FY 1989 request is \$130.8 million for this effort. In addition, \$36.3 million in FY 1988 was provided for production support and equipment replacement at active facilities, and \$42.0 million is requested in FY 1989.

The Amended FY 1989 request of \$172.8 million contains the following projects:

Modernization of the "A" Compositions facility at Holston Army Ammunition Plant (located at Kingsport, Tennessee) is required in order to upgrade facilities to meet increased requirements. For this effort, \$30.0 million is requested.

Purchase and installation of chucking machines is required to fill voids in the M42/M46/M77 grenade line at Riverbank Army Ammunition Plant (located at Riverbank, California) at a cost of \$1.4 million.

Engineering design funds of \$26.4 million are required for initiation and/or continuation of construction criteria, equipment, and concept; final and process design; design related studies and other design related work necessary to assure efficient and timely execution of current and future facility projects.

This effort is to enclose walkways between the pyrotechnic production and storage buildings at the Lake City Army Ammunition Plant (located at Independence, Missouri). Under present conditions, production must be halted during inclement weather to protect against the entry of water into product mix. Water reacts with strontium in the mix, resulting in a severe fire hazard. In Amended FY 1989 budget, \$3.8 million is requested for these walkways in order to maintain production continuity and safety by reducing fire hazard.

To upgrade the primary overhead electrical distribution system at the Radford Army Ammunition Plant (located at Radford, Virginia), \$16.5 million is requested to correct a hazardous deficiency in the existing congested system that results in electrical faults and propagates other circuits by electrical arcing, causing production curtailments and hazards to plant personnel.

To correct safety waivers at four Army Ammunition Plants, \$2.6 million is requested. This will correct deficiencies on the modernized detonator load line at Iowa Army Ammunition Plant (located at Middletown, Iowa); upgrade deluge system at Lone Star AAP (located at Texarkana, Texas); enhance operator safety in three areas of the detonator backbone at Kansas AAP (located at Parsons, Kansas); and provide temperature and humidity conditioning for three locations at the Longhorn Army Ammunition Plant (located at Marshall, Texas), to avoid static electricity hazards and prevent moisture condensation where metal powders are exposed.

In FY 1989, \$13.0 million is requested for phase one of the High Melt Explosive (HMX) Musall process design. The location of the facility has not been determined.

In order to establish an initial production facility to load, assemble and pack (LAP) the sensor fuze weapon (SFW) at Kansas Army Ammunition Plant (located at Parsons, Kansas) in support of Air Force requirements, \$3.4 million is requested.

To provide for procurement, installation and debug of an Automated Inspection System (AIDACS) located at the Iowa Army Ammunition Plant (located at Middletown, Iowa), \$5.3 million is requested. The AIDACS system is utilized for inspection of the explosive casts of the 105mm High Explosive (HE) M913 Rocket Assisted Projectile (RAP).

Also included in the Amended FY 1989 request is \$42.0 million for the necessary production support and equipment replacement for plants in active production.

Replacement of a 36-inch diameter water main is required at Holston Army Ammunition Plant (located at Kingsport, Tennessee). The water main is used to provide a reliable cooling water supply to the explosives manufacturing facilities and for fire protection. The river main is deteriorated and requires constant repair. Funding of \$3.5 million is requested in order to replace the 19,900 foot-long main.

The expansion of Family of Scatterable Mines (FASCAM) presses and igloos at Iowa Army Ammunition Plant (located at Middletown, Iowa) will provide an additional 10 presses to balance FASCAM main charge press capacity with the anti-tank (AT) mine assembly capability. Funding of \$9.8 million is requested for this purpose.

Modernization of coolant filtration system will correct a variety of environmental problem in the production of metal parts items at Louisiana Army Ammunition Plant (located at Shreveport, Louisiana). Funding in the amount of \$1.1 million is requested.

Funding of \$2.4 million is required to provide additional capability for the detonator lead cup assembly for the Projectile 155mm Aerial Denial Artillery Munition (ADAM) projectile.

To modernize loading dock facilities at Holston Army Ammunition Plant (located at Kingsport, Tennessee), \$3.7 million is requested to replace facilities that are used for off-site shipment of explosive compositions. The industrial readiness of this plant will be improved; increased loading capacity will be realized resulting in manpower savings.

In order to construct a Trinitroresorcinol (TNR) manufacturing facility at Lake City Army Ammunition Plant (located at Independence, Missouri), \$7.9 million is requested to replace the existing facility that has deteriorated from constant exposure to nitric and sulfuric acid fumes.

Layaway of Industrial Facilities

(\$ In Thousands)	
Actual FY 1988	Amended FY 1989
19,417	19,623

The \$19.6 million is requested for layaway in FY 1989 for the protection and preservation of equipment and facilities no longer required for active production, but which must be retained for future peacetime or mobilization production needs.

Components for Prove-out

(\$ In Thousands)	
FY 1988	Amended FY 1989
8,264	14,403

This line provides for the prove-out and acceptance of prior year modernization, expansion and initial production facilities. Funds are used to assure that the facility is capable of producing an acceptable end product, manufacturer warranties are met, and the facility is capable of producing at the designed rate.

The FY 1988 program includes prove-out of the following items/lines:

<u>Plant</u>	<u>Title of Prove-out</u>
Longhorn Army Ammunition Plant	MUSALL Pilot Plant
Lake City Army Ammunition Plant	5.56mm Squad Automatic Weapons System Tracer
Holston Army Ammunition Plant	Acid-Restore 300 Tons per Day, Ammonia Oxidation Plant, Phase II

The FY 1989 prove-out program includes an XM864 metal parts facility at Louisiana Army Ammunition Plant, Composition C-4 line at Holston Army Ammunition Plant and small caliber multi-product handling system at Lake City Army Ammunition Plant.

Jefferson Proving Ground

(\$ In Thousands)

	<u>FY1988</u>	<u>Amended FY1989</u>
	-	993

This program will modernize and upgrade existing test instrumentation to conduct production acceptance testing of Army ammunition components. This effort will replace obsolete, unreliable or economically unrepairable test equipment and instrumentation currently in use. This will result in more accurate reliable data and faster turn around of the production items being tested. This will also allow for earlier release of product, avoiding the requirement for additional storage facilities, and reduce waste and scrap resulting from stopping faulty production. This effort is to be done in fully funded, independent phases and is expected to continue through FY 1991, at an estimated total cost of \$10.0 million.

RDX Facility

	<u>FY 1988</u>	<u>Amended FY 1989</u>
	262,700	-

The FY 1988 Appropriations Act provided \$262.7 million for construction of the first and second phases of a RDX facility at Louisiana Army Ammunition Plant (located at Shreveport, Louisiana). No funds are requested in FY 1989, but future budgets will include phase 3 effort.

PROCUREMENT OF AMMUNITION, ARMY

Section 3

Comparison of Program Requirements and Financing

Comparison of FY 1988 program requirements as reflected in FY 1988/89 Budget with FY 1988 program requirements as shown in Amended FY 1989 Budget.

Comparison of FY 1988 financing as reflected in FY 1988/89 Budget with FY 1988 financing as shown in Amended FY 1989 Budget.

Comparison of FY 1987 program requirements as reflected in FY 1988/89 Budget with FY 1987 program requirements as shown in Amended FY 1989 Budget.

Comparison of FY 1987 financing as reflected in FY 1988/89 Budget with FY 1987 financing as shown in Amended FY 1989 Budget.

COMPARISON OF FY 1988 PROGRAM REQUIREMENTS
AS REFLECTED IN FY 1988/89 BUDGET WITH
FY 1988 PROGRAM REQUIREMENTS AS SHOWN IN AMENDED FY 1989 BUDGET

SUMMARY OF REQUIREMENTS (In Thousands of Dollars)			
Appropriation:	Program Requirements In FY 1988/89 Budget	Program Requirements In Amended FY 1989 Budget	Increase (+) or Decrease (-)
	Procurement of Ammunition, Army		
1. Ammunition	2,025,733	1,845,650	-180,083
2. Ammunition Production Base Support	168,542	427,942	+259,400
Reimbursable Program	147,500	41,900	-105,600
Total Fiscal Year Program	2,341,775	2,315,492	-26,283

EXPLANATION BY ACTIVITY

1. Ammunition - (\$ million) The FY 1988 decrease in the amount of \$180.1 million is the overall adjustment to the ammunition hardware request as a result of Congressional action on the FY 1988/89 request.

2. Ammunition Production Base Support - (\$ million) The FY 1988 increase in the amount of \$259.4 million is the overall adjustment to the ammunition production facilities request as a result of Congressional action on the FY 1988/89 request.

COMPARISON OF FY 1988 FINANCING AS REFLECTED
IN THE FY 1988/9 BUDGET WITH FY 1988 FINANCING
AS SHOWN IN AMENDED FY 1989 BUDGET

Appropriation:	(In Thousands of Dollars)		
	Financing In FY 1988/89 Budget	Financing In Amended FY 1989	Increase (+) or Decrease (-)
<u>Procurement of Ammunition, Army</u>			
Direct Program Requirements	2,194,755	2,273,592	+78,837
Reimbursable Program Requirements	133,500	41,900	-91,600
Total Program Requirements	<u>2,328,255</u>	<u>2,315,492</u>	<u>-12,763</u>
Offsetting Collections	-133,500	-41,900	+91,600
Available to Finance New Budget Plans		- 7,200	- 7,200
 BUDGET AUTHORITY	 2,194,755	 2,266,392	 +71,637
 Appropriation	 2,194,755	 2,273,592	 +78,837
Appropriation Rescinded		- 7,200	- 7,200
Appropriation (Adjusted)	2,194,755	2,266,392	+71,637

EXPLANATION OF CHANGES IN FINANCING

Based on favorable Congressional support the FY 1988 total program requirements for FY 1988 have increased by \$ 78.8 million since the FY 1988/89 budget request was presented to the Congress. This FY 1988 net increase is attributed to the enactment of the FY 1988 Appropriations Act. The specific adjustments are as follows.

1. Direct Program - (\$ in Million) The FY 1988 increase in the amount of \$78.8 million is the result of the Congressional support by appropriating additional resources that exceeded the total ammunition program request.
2. Reimbursible Program - (\$ in million) Estimated sales of ammunition to customers, including foreign countries, have decreased by \$91.6 million to reflect current planned program execution.
3. Offsetting Collections - (\$ in million) Because of the decreased sales forecasted in the reimbursable program, the estimated collections have been adjusted accordingly by \$91.6 million.
4. Transfer from Other Accounts - (\$ in million) The FY 1988 Appropriations Act reflects the rescission of \$7.2 million from the FY 1987 program. This rescission offsets the total budget authority required to finance the FY 1988 program.
5. Budget Authority - (\$ in Million) The FY 1988 increase in the amount of \$71.6 million is the result of the FY 1988 Appropriations Act.

COMPARISON OF FY 1987 PROGRAM REQUIREMENTS
AS REFLECTED IN FY 1988/89 BUDGET WITH
FY 1987 PROGRAM REQUIREMENTS AS SHOWN IN AMENDED FY 1989 BUDGET

SUMMARY OF REQUIREMENTS (In Thousands of Dollars)			
Appropriation:	Program Requirements In FY 1988/89 Budget	Program Requirements In Amended FY 1989 Budget	Increase (+) or Decrease (-)
Procurement of Ammunition, Army			
1. Ammunition	1,732,150	1,731,989	-161
2. Ammunition Production	355,000	348,088	-6,912
Reimbursable Program	143,900	35,326	-108,574
Total Fiscal Year Program	2,231,050	2,115,403	-115,647

Explanation by Activity

1. Ammunition - (\$ Millions) The FY 1987 decrease in the amount of \$.2 million is the result of reprogramming funds from ammunition hardware to ammunition production base support.
2. Ammunition Production Base Support - (\$ Millions) The FY 1987 decrease in the amount of \$6.9 million is the result of three adjustments: 1) an increase in the amount of \$ 2 million resulting from reprogramming funds from hardware to meet production base support requirements, 2) an increase in the amount of \$.1 million that was transferred to this account for environmental restoration, and 3) a decrease in the amount of \$7.2 million resulting from the recession included in the FY 1988 Appropriations Act.

COMPARISON OF FY 1987 FINANCING AS REFLECTED
IN THE FY 1988/89 BUDGET WITH FY 1987 FINANCING
AS SHOWN IN AMENDED FY1989 BUDGET

Appropriation:	(In Thousands of Dollars)		
	Financing In FY 1988/89 In Budget	Financing Amended FY 1989	Increase (+) or Decrease (-)
Procurement of Ammunition, Army			
Direct Program Requirements	2,087,150	2,080,077	-7,073
Reimbursable Program Requirements	143,900	35,326	-108,574
Total Program Requirements	<u>2,231,050</u>	<u>2,115,403</u>	<u>-115,647</u>
Offsetting Collections	-143,900	-35,326	+108,574
Available to Finance Subsequent Year Budgets	-0-	+7,200	+7,200
Available to Finance New Budget Plans	-0-	-72,562	-72,562
BUDGET AUTHORITY	2,087,150	2,014,715	-72,435
BUDGET AUTHORITY	2,087,150	2,014,715	-72,435
Appropriation	2,087,150	2,087,150	0
Appropriation Rescinded		-72,562	-72,562
Transferred from Other Accounts		+127	+127
Appropriation (Adjusted)	2,087,150	2,014,715	-72,435

EXPLANATION OF CHANGES IN FINANCING (\$ Million)

The FY 1987 total program requirements have decreased by \$115.6 million subsequent to the FY 1988/89 budget submission to the Congress. This FY 1987 decrease is the result of the following adjustments.

1. Direct Program - (\$ million) The FY 1987 decrease is the result of the recession in the amount of \$7.2 million and the transfer of \$.1 million for environmental restoration from another appropriation.
2. Reimbursable Program - (\$ million) Estimated sales of ammunition to customers, including foreign countries, have decreased by \$108.6 million.
3. Offsetting Collections - (\$ million) Because of decreased sales experienced in the reimbursable program, the estimated collections have been adjusted accordingly by \$108.6 million.
4. Budget Authority - (\$ million) Overall FY 1987 decrease of 72.4 million is the result of two adjustments: 1) 72.5 million recession and 2) transfer of .1 million from another appropriation.

PROCUREMENT OF AMMUNITION, ARMY

SECTION 4

SELECTED DATA SHEETS

FOR PRODUCTION FACILITIES

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PROCUREMENT OF AMMUNITION, ARMY
PRODUCTION BASE SUPPORT
(\$ in Millions)

Service: Army

P-1 Line Item: Provision of Industrial Facilities

Projects:

ANNUAL SUPPORT

	<u>FY1986</u>	<u>FY1987</u>	<u>FY1988</u>	<u>Amended FY1989</u>
58X5060 - Jefferson Proving Ground: Production Support and Equipment Replacement (PS&ER)	1.4	2.2	1.2	1.2
58X5314 - Louisiana Army Ammunition Plant (AAP): - PS&ER	1.8	2.3	2.5	2.3
58X5316 - Lone Star AAP: - PS&ER	3.0	2.7	3.4	2.0
58X5317 - Milan AAP: - PS&ER	1.5	2.4	2.7	4.3
58X5325 - Sunflower AAP: - PS&ER	0	.3	1.2	.3
58X5326 - Redford AAP: - PS&ER	6.0	4.4	4.4	5.1
58X5327 - Longhorn AAP: - PS&ER	2.3	2.3	2.9	2.5
58X5328 - Holston AAP: - PS&ER	2.7	2.4	1.7	2.2
58X5329 - Kansas AAP: - PS&ER	2.5	3.3	1.5	2.8
58X5330 - Indiana City AAP: - PS&ER	3.1	3.3	4.2	4.2
58X5332 - Lake City AAP: - PS&ER	3.1	2.2	2.1	3.9
58X5333 - Iowa AAP: - PS&ER	2.8	2.7	1.2	1.7
58X5342 - Scranton AAP: - PS&ER	1.5	1.9	.4	1.8
58X5343 - Riverbank AAP: - PS&ER	.8	.2	1.2	1.1
58X5662 - All Plants: Omnibus Project for Purchase of Self-Amortizing Equipment	1.0	1.2	1.0	1.0
58X5711 - Environmental Restoration Projects under each \$900,000 each	1.0	3.9	2.9	3.0
	<u>.9</u>	<u>2.0</u>	<u>1.8</u>	<u>2.6</u>
Subtotal Production Support & Equipment Replacement	35.4	39.7	36.3	42.0

PROCUREMENT OF AMMUNITION, ARMY
PRODUCTION BASE SUPPORT
(\$ in Millions)

Projects

Initial Production Facility

	<u>FY1986</u>	<u>FY1987</u>	<u>FY1988</u>	<u>Amended FY1989</u>
5860063 - Pine Bluff Arsenal: Bigeye Bomb Load, Assemble & Pack (LAP)	28.3			
5860074 - Commercial: Bigeye Bomb Metal Parts (MPTS)	17.6			
5860079 - X-Facility: 0-(2-dissopropylaminoethyl) O'-ethylmethylphosphonite (QL) Production facility for Bigeye Bomb	48.0			
5860117 - Longhorn AAP: Musall Facility	20.0			
5860127 - Commercial: 105mm XM900 Metal Parts and Core	24.0			
5860140 - Redford AAP: Improved Nitrocellulose Purification Facility	2.6			
5862208 - Lake City AAP: 5.5mm Squad Automatic Weapon System (SAWS) Ball Lines 4, 5 Conversion	3.8			
5870103 - Commercial: Binary - Methylphosphonic dichloride (DC)		18.6		
5870115 - Multiple Sites: 155mm XM864 LAP and Metal parts	13.6			
5880115 - X-Facility: 155mm X864 Base Burner Assembly			7.1	
5880125 - McAlester AAP: 16"/50 Projectile LAP Facility			1.0	
5890110 - Kansas AAP: Sensor Fuzed Weapon LAP				3.4
Subtotal Initial Production Facilities	157.9	18.6	8.1	3.4

REQUIREMENT OF AMMUNITION, ARMY
PRODUCTION BASE SUPPORT
(\$ in Millions)

<u>Projects</u>	<u>FY1986</u>	<u>FY1987</u>	<u>FY1988</u>	<u>Amended FY1989</u>
<u>EXPANSION</u>				
5862195 - Lake City AAP: 5.56mm Bandoleer M8 Pack Equipment	2.2			
5863257 - Commercial: Bomb - Combined Effects Munitions CEM/BLU 97B Metal Parts	11.1			
58X3046 - Engineering Design	18.3	16.7	30.4	26.4
5872307 - Radford AAP: 155mm Solvent Stick Propellant Manufacture		3.1		
5873277 - X-Facility: 155mm M687 Projectile Metal Parts (MPTS)		4.6		
5870115 - Multiple: 155mm XM864 Metal Parts and LAP		11.3	12.2	
5882656 - Louisiana AAP: XM864 Projectile 155mm Howitzer				2.4
5892046 - Lone Star AAP: Detonator Lead Cup - 155mm Aerial Denial Artillery Munition (ADAM)				9.8
5892343 - Iowa AAP: Family of Scatterable Mines (FASCAM) Presses and Igloos				13.0
5892430 - X-Facility: MUSALL Design, Phase I High Melt Explosive (HMX)				
Subtotal Expansion:	31.6	35.7	42.6	51.6

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PROCUREMENT OF AMMUNITION, ARMY
PRODUCTION BASE SUPPORT
(\$ in Millions)

<u>Projects</u>	<u>FY1986</u>	<u>FY1987</u>	<u>FY1988</u>	<u>Amended FY1989</u>
<u>Modernization (MOD)</u>				
5862407 - Lake City AAP: 5.56mm Small Caliber Multiproduct Handling System	7.3			
58x2439 - Holston AAP: Productivity Improvements (RDX/HMX) Air Compressor Bldg and Backup Electric Power		4.2	7.1	
5862447 - Holston AAP: Conversion Research Department Explosive to High Melt Explosive (RDX to HMX)	24.9			
5682488 - St. Louis AAP: Electrical Distribution System	10.0	8.9		
5872134 - Radford AAP: Steam Tie Line Horseshoe Area		2.0		
5872158 - Indiana AAP: Bldg - Central Laboratory		9.4		
5872225 - Radford AAP: Upgrade Powerhouse Electrical Distribution System		2.5		
5872102 - Lone Star AAP: Automate Handling Operations		4.7		
5873302 - Commercial: Second Forge Line Equipment Package #422		1.7		
5872565 - Milan AAP: Automate Load and Assembly Operations		2.4		
5872659 - Holston AAP: Repair Acetic Acid Facilities		1.5		
5872674 - Louisiana AAP: Anodic Coat Aluminum Ogives M825/483		2.1		
5872340 - Badger AAP: Repair/Replace Defective Process Equipment		5.9		
5872476 - Badger AAP: Correct Line Deficiencies				
5882218 - Radford AAP: Continuous Automated Single Base Line Deficiencies Correction			8.1	
5882781 - Riverbank AAP: Production Capability			20.0	
5882800 - Multiple Locations: Modernization to Provide Security			11.7	
5892222 - Iowa AAP: 155mm M913 Automatic Inspection System				5.3
5892731 - Riverbank AAP: Chucks M42/46 Grenade Line				1.4
58x2700 - Multiple locations: Correction of Safety Deficiencies			3.6	2.6

PROCUREMENT OF AMMUNITION, ARMY
PRODUCTION BASE SUPPORT
(\$ in Millions)

<u>Projects (Continued)</u>	<u>FY1986</u>	<u>FY1987</u>	<u>FY1988</u>	<u>FY1989</u>
<u>Modernization (MOD)</u>				
5892055 - Holston AAP: Loading Docks for Explosives (RDX/HMX)				3.7
5892495 - Lake City AAP: Relocate and Modernize TNR Process				7.9
5892498 - Lake City AAP: Covered Walkways for Pyrotechnic Mixing Area				3.8
5892519 - Radford AAP: Primary Overhead Electrical Distribution System				16.5
5892744 - Louisiana AAP: Coolant Filtration				1.1
5892758 - Holston AAP: Replace River Water Main				3.5
5893000 - Holston AAP: Modernization "A" Composition Facility, Line 10				30.0
Projects Under \$900,000	.9			
Subtotal Modernization	43.1	45.3	50.5	75.8
 TOTAL - PROVISION OF INDUSTRIAL FACILITIES	 268.0	 139.3	 137.5	 172.8

PROCUREMENT OF AMMUNITION, ARMY
PRODUCTION BASE SUPPORT
(\$ in Millions)

P-1 Line Item: Production Base Modernization: Projects:	<u>FY1986</u>	<u>FY1987</u>	<u>FY1988</u>	<u>Amended FY1989</u>
5860086 - Lake City Army Ammunition Plant (AAP): 5.56mm Tracer Charging Second Unit (Expansion)	2.7			
5862232 - Lake City AAP: 5.56 Blank - Second Unit (Expansion)	1.5			
5862523 - Lone Star AAP: Family of Scatterable Mines (FASCOM) Melt Pour Equipment Modernization	1.0 2.7			
5863281 - Commercial: Fuze Production Equipment Modernization				
5862224 - Badger AAP: Nitric Acid Concentration/ Sulfuric Acid Concentration (NAC/SAC) Modernization	10.7 39.8 1.7			
5863565 - Radford AAP: Powerhouse Modernization				
5862145 - Lone Star AAP: Mortar Test Assembly Modernization	9.0			
5863244 - Commercial: 155mm Metal Parts (MPTS) Plant Equipment Package 422		13.1		
5863400 - Multiple: Engineering Design	13.6			
5862476 - Badger AAP: Line Deficiency Corrections	9.5			
5862512 - Louisiana AAP: 155mm MPTS on Y Line	3.0			
5862368 - Badger AAP: Ammonia Oxidation Plant Deficiencies	1.3			
5873293 - Commercial: Forge Room Equipment (PEP 422)		7.0		
5862554 - Mississippi AAP: Correct Deficiencies		130.2		
5873201 - Iowa AAP: M55 Detonator Loader Replacement Modernization		1.5		
5872487 - Radford AAP: TNT Line B Voids Correction		2.0		
5873046 - Multiple: Engineering Design in Support of Mobilization		14.5		
5873212 - Commercial: 120mm Combustible Cartridge Case Second Source		8.0		
Items less than \$900,000	<u>1.1</u>	<u>1.0</u>		
	97.6	177.3		

PROCUREMENT OF AMMUNITION, ARMY
PRODUCTION BASE SUPPORT
(\$ in Millions)

<u>Projects</u>	<u>FY1986</u>	<u>FY1987</u>	<u>FY1988</u>	<u>Amended FY1989</u>
<u>P-1 Line Item:</u> Layaway of Industrial Facilities				
<u>Projects</u>				
58X8450 - Armament Munitions and Chemical Command (AMCCOM) Layaway and/or Redistribution of Government-Owned Equipment in Government-Owned Plants	13.7	16.9	17.0	15.6
58X9580 - Armament Munitions and Chemical Command (AMCCOM) Layaway and/or Redistribution of Government-Owned Equipment	2.9	3.8	2.4	4.0
5865260 - Jefferson Proving Ground: Layaway Test Facility	.7			
3864201 - Missile Command Layaway of Government- Owned	<u>.2</u>			
Subtotal Layaway of Industrial Facilities	17.5	20.7	19.4	19.6
<u>P-1 Line Item:</u> Components for Prove-out	13.3	8.6	8.3	14.4
<u>P-1 Line Item:</u> RDX Facility			262.7	
<u>P-1 Line Item:</u> Jefferson Proving Ground	1.9	2.2		1.0
58X5160 - Jefferson Proving Ground Test Facility				
<u>P-1 Line Item:</u> Chemical Demilitarization	<u>78.5</u>			
Total Ammunition Production Base Support	476.8	348.1	427.9	207.8

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